AIRCRAFT WHEEL & BRAKE DIVISION
PARKER HANNIFIN CORPORATION
AVON, OHIO

PARTS LIST

199-113 CONVERSION KIT

GRUMMAN MALLARD MODELS

G-73 AND TURBO CONVERSIONS

PART NUMBER	DRAWING REVISION	DESCRIPTION	QUANTITY
30-148	Rev. D dated 12-14-1988	Brake Assembly	2
40-174	Rev. D dated 10-04-2006	Wheel Assembly, 32 x 8.8 Type VII	2
103-40300	----------	Bolt (AN7-11A)	24
094-12200	----------	Nut (AN365-720)	24
095-12300	----------	Washer (AN960-716)	48

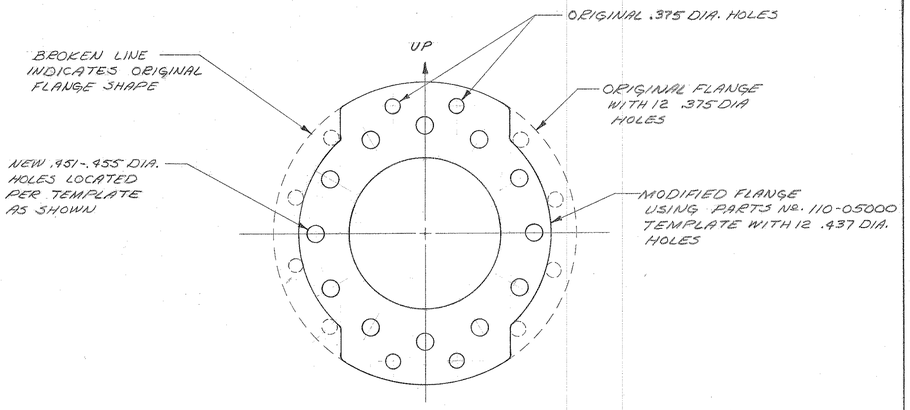
Publication Package (P/N PP199-11300)

199-113 P/L	Rev C dated 05-15-2007	Parts List for 199-113 Kit (This Document)
50-83	Rev. B dated 10-15-1982	Installation Drawing
110-05000	Rev. A dated 02-13-1980	Template – Mtg.
CM 40-174/30-148	Rev. C dated 02-10-1997	Maintenance Manual
SA651GL	Issue date 10-28-82	Supplemental Type Certificate
PRM13A	----------	Non Asbestos Organic Brake Lining Conditioning Procedure
PRM69	----------	General Maintenance Information
-------		Product Registration Card

NOTES:

1. This kit will convert one aircraft to Cleveland Wheels and Brakes.
2. For use with MIL-H-5606 (Red Fluid).

DO NOT SCALE

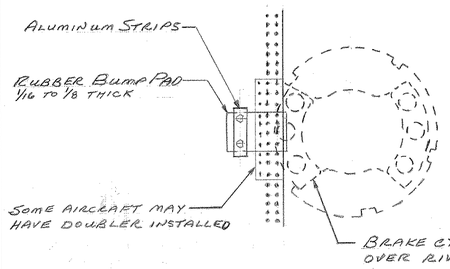


FLANGE MODIFICATION: ½ SIZE

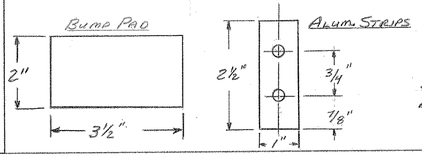
1. MOUNT TEMPLATE PART No. 110-05000 WITH 4, .375 BOLTS IN POSITION SHOWN ON DRAWING.
2. USE TEMPLATE AS A GUIDE FOR LOCATION OF NEW .451-.455 DIA. HOLES (12)
3. REMOVE AREA OF FLANGE NOT COVERED BY TEMPLATE (BROKEN LINES IN DRAWING)
4. PROVIDE SMOOTH EDGE FINISH ON FLANGE

INSTALL RUBBER BUMP PAD AS SHOWN BELOW - IF REQUIRED

1. PAD TO COVER RIVET HEADS UNDER CYLINDER TAIL
2. ALUMINUM STRIP (2 ea) TO HOLD BOLTS & PAD. ONE STRIP INSIDE FUSELAGE AND ONE OVER PAD.



3. DRILL TWO HOLES IN WHEEL WELL SKIN, RUBBER PAD AND ALUMINUM STRIPS. COVER BARE METAL WITH CORROSION PROTECTIVE COATING.
4. INSTALL PAD, ALUMINUM STRIPS, BOLTS WASHERS AND SELF LOCKING NUTS.



BOLTS: AN 3-
WASHERS: AN960 - No. 10
NUTS: AN364-1032
EQUIVALENT BOLTS, WASHERS, AND NUTS MAY BE USED

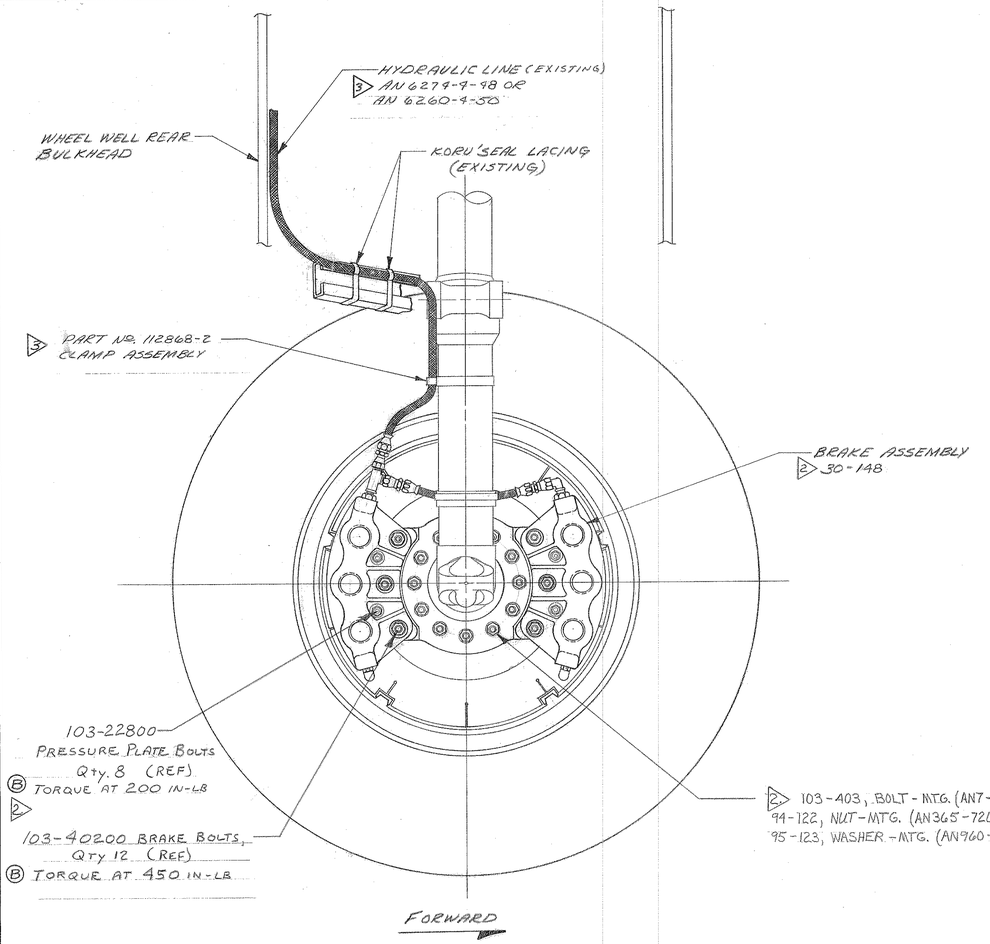
NOTES:

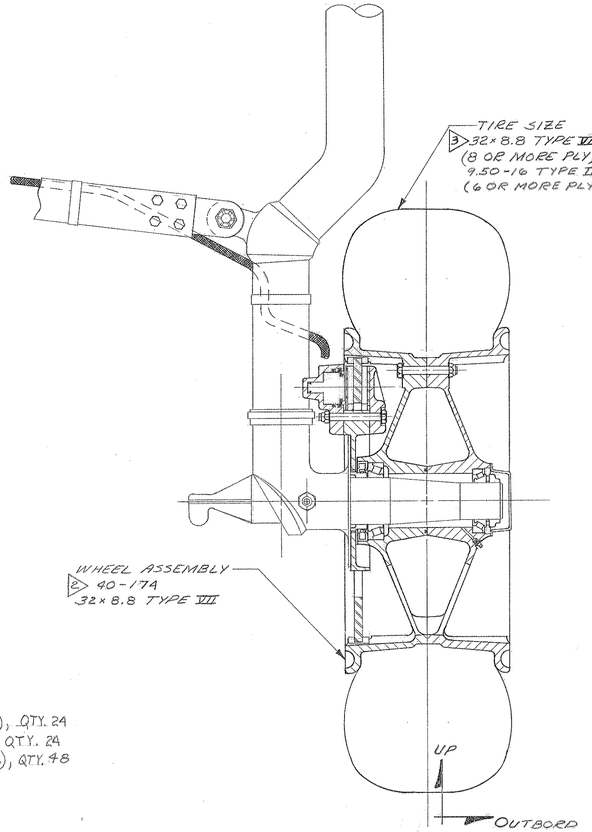
1. THIS INSTALLATION APPLIES TO GRUMMAN MALLARD MODELS G-73 AND TURBO CONVERSIONS.
2. COMPONENTS SUPPLIED BY CLEVELAND WHEELS & BRAKES
3. COMPONENTS NOT SUPPLIED WITH CLEVELAND CONVERSION KIT 199-113

50-83				
CHANGE NOTICE	LETTER	DESCRIPTION OF CHANGE	CHG. BY	DATE	CHK'D. BY
—	A	ADDED MOUNT HARDWARE	KB	9/11/78	
E71/2	B	INTL RELEASE ADDED BOLT TORQUE	BB	10/19/78	

INSTALLATION PROCEDURES

1. PROPERLY JACK UP AIRCRAFT
2. DEFLATE MAIN LANDING GEAR TIRES
3. REMOVE EXISTING M.L.G. WHEELS. RETAIN AXLE NUT AND WASHER
4. REMOVE HYDRAULIC LINE FROM BRAKE. CAP LINE TO PREVENT FLUID LEAKAGE.
5. REMOVE EXSTING M.L.G. BRAKE.
6. MODIFY AXLE FLANGE, USING MOUNTING TEMPLATE, P/N 110-05000, PER INSTALLATION DRAWING 50-83
7. RELOCATE BRAKE SHUTTLE VALVE (IF SO EQUIPPED) INTO WHEEL WELL, TO PROVIDE ONE HYDRAULIC LINE DOWN STRUT TO BRAKE.
   NOTE: THIS STEP IS OPTIONAL, BUT WILL PROVIDE A NEATER INSTALLATION.
8. INSTALL CLEVELAND BRAKE 30-148 USING HARDWARE PROVIDED IN 199-113 KIT.
9. ATTACH BRAKE HYDRAULIC LINE AND RETRACT LANDING GEAR; MAKE SURE STRUT MOVEMENT DOES NOT CAUSE BINDING OR CRIMPING OF THE HYDRAULIC LINE.
10. INSPECT FOR CLEARANCE BETWEEN THE BRAKE AND WHEEL WELL. ADJUST LANDING GEAR UPLOCK MECHANISM TO PROVIDE CLEARANCE
11. EXTEND LANDING GEAR AND BLEED BRAKE. PRESSURE BLEEDING IS RECOMMENDED. AVOID SPILLING BRAKE FLUID ON BRAKE LININGS. FLUID MAY BE PARTIALLY REMOVED FROM LININGS WITH TRICHLOROETHANE OR EQUIV.
12. INSERT WHEEL SPACER (067-03300) INTO INBOARD BEARING AND INSTALL CLEVELAND WHEEL 40-174 ON AXLE. INSERT OUTBOARD BEARING, WASHER AND AXLE NUT. WHILE ROTATING WHEEL, TIGHTEN AXLE NUT TO 90 IN. LB. THEN BACK OFF TO ZERO. WHILE ROTATING WHEEL RETIGHTEN AXLE NUT TO 20 IN. LB. ALIGN COTTER PIN SLOT (NUT) WITH THE NEAREST HOLE IN AXLE AND INSERT COTTER PIN. INSTALL GASKET AND HUB CAP.
13. CHECK FOR AND ELIMINATE INTERFERENCE PECULIAR TO INDIVIDUAL AIRCRAFT. ADJUST UPSTOP DAMPER AND LOCK TO PROVIDE BRAKE TO WHEEL WELL CLEARANCE. IF REQUIRED, INSTALL RUBBER BUMP PAD PER DRAWING 50-83.
14. DEPRESS AND RELEASE TOE PEDALS SEVERAL TIMES. ROTATE WHEEL BY HAND, CHECKING FOR BRAKE DRAG. A SLIGHT AMOUNT OF DRAG IS ACCEPTABLE AND NOT DETRIMENTAL. A SEVERELY BOUND SYSTEM SHOULD BE INVESTIGATED AND CORRECTED.
15. REMOVE AIRCRAFT FROM JACKS AND CONDITION LIVING PER PROCEDURE IN ENCLOSED MAINTENANCE MANUAL.
16. WEIGHT AND BALANCE:
    40-174 WHEEL ASS'Y. WEIGHS 38.0 LB.
    30-148 BRAKE ASS'Y. WEIGHS 30.5 LB.
    WEIGH ORIGINAL WHEELS & BRAKES AND REVISE WEIGHT AND BALANCE DATA IN LOG BOOK.





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QTY	QTY	ITEM	PART NO.	DESCRIPTION	MATERIAL & SPEC.	HEAT TREAT & SPEC.	FINISH & SPEC.	WGT.
NEXT ASSEMBLY				QTY FINAL ASSEMBLY	QTY PATTERN, CASTING OR BLANK NO.			

THIS DESIGN IS THE PROPERTY OF PARKER HANNIFIN CORP. AIRCRAFT WHEEL AND BRAKE DIVISION AND IS NOT TO BE COPIED, DUPLICATED, OR USED AS THE BASIS FOR MANUFACTURE OR SALE OF EQUIPMENT WITHOUT OUR WRITTEN PERMISSION.

ZYGLO PER MIL-I-6866 STAMP M ON PART
MAGNAFLUX PER MIL-I-6868 STAMP P ON PART
√ MACHINED SURFACES PER MILSTD 10 UNLESS OTHERWISE NOTED
UNLESS NOTED ALL THREADS PER MIL-S-7742

WORK TO DIMENSIONS — DO NOT SCALE
TOLERANCE FOR XXX ± .010
TOLERANCE FOR XX ± .030
TOLERANCE FOR ANGULAR DIMS. ± 1/2°
TOLERANCE FOR FRACTIONAL DIMS. ± 1/32
BREAK SHARP EDGES .010 UNLESS NOTED. REMOVE ALL BURRS BEFORE PLATING. DRILL PER INSP. PROCEDURE NO. 114.

DRAWN BY: [illegible] 10 Oct 82
CHECKED BY: [illegible] 18 Oct 78
SCALE: ¼
NAME: WHEEL & BRAKE INSTALLATION

Cleveland Wheels & Brakes
Aircraft Wheel and Brake Division
Parker Hannifin Corporation
1160 Center Road
Avon, Ohio 44011

50-83

DO NOT SCALE

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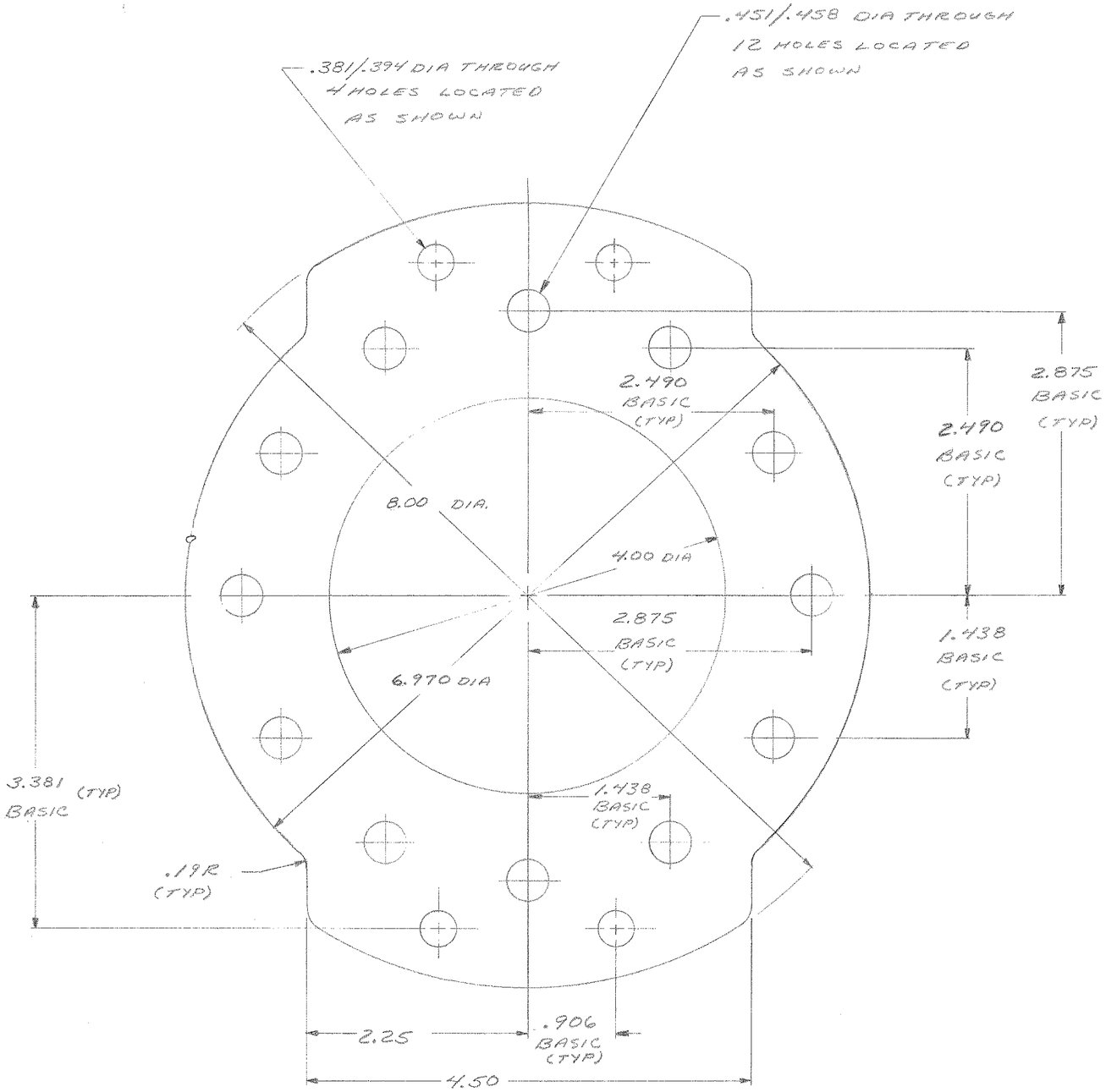
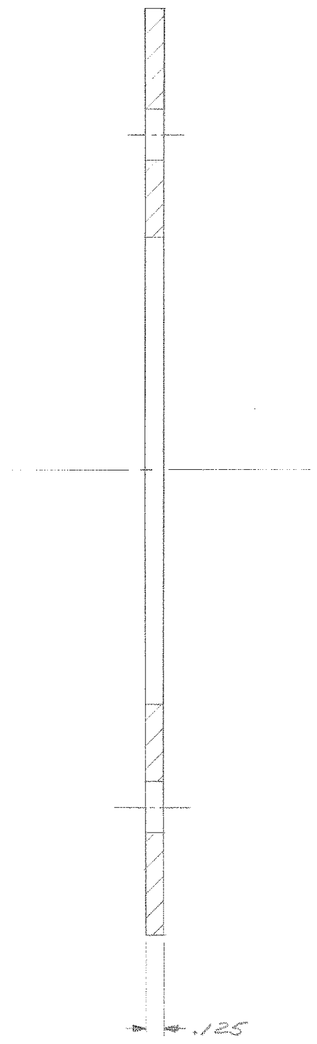
110-05000 A

CHANGE NOTICE	LETTER	DESCRIPTION OF CHANGE	CHG. BY	DATE	CHK'D. BY
263/85	-	1ST PROD. RELEASE		1-23-80	VR
264/77	A	6.970 DIA WAS 6.650	VB	2/13/80	





QTY	QTY	ITEM	PART NO.	DESCRIPTION	MATERIAL & SPEC.	HEAT TREAT & SPEC.	FINISH & SPEC.	WGT.
			110-05000	TEMPLATE	AL. 2024 OR EQUIV	T3		

NEXT ASSEMBLY 199-81	QTY 1	FINAL ASSEMBLY	QTY
PATTERN, CASTING OR BLANK NO.	DRAWN BY JB 8/15/79		
	CHECKED BY		
	SCALE Full		

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- ZYGLO PER MIL-I-6866 STAMP M ON PART
- MAGNAFLUX PER MIL-I-6868 STAMP P ON PART
- √ MACHINED SURFACES PER MIL-STD 10 UNLESS OTHERWISE NOTED
- UNLESS NOTED ALL THREADS PER MIL-S-7742

WORK TO DIMENSIONS -- DO NOT SCALE
TOLERANCE FOR .XXX ± .010
TOLERANCE FOR .XX ± .030
TOLERANCE FOR ANGULAR DIMS. ± 1/2°
TOLERANCE FOR FRACTIONAL DIMS. ± .030

BREAK SHARP EDGES .010 UNLESS NOTED. REMOVE ALL BURRS BEFORE PLATING. DRILL PER INSP. PROCEDURE NO. 114.

Cleveland Wheels & Brakes
1160 Avon Center Road, Avon, Ohio 44011
a division of VanSickle Industries, Inc.
"the brake people" P405

NAME TEMPLATE - MTG. 110-05000

CLEVELAND WHEELS & BRAKES

MAINTENANCE MANUAL

FOR THE

40-174 MAIN WHEEL ASSEMBLY

AND

30-148 MAIN BRAKE ASSEMBLY

USED ON

THE GRUMMAN MALLARD

REV. A, DATED 7-20-89

REV. B, DATED 3-6-90

REV. C, DATED 2-10-97

LIST OF REVISIONS

REVISION	DATE	PAGE	DESCRIPTION	APVD.
A	07-20-89	1	Section I, 4. ... ADD: "Refer to Appendix A for Sand-out Limits"	BB
		7 & 8	Add New Pages 7 and 8, "Appendix A: Wheel Sand-out Limits"	
B	03-06-90	6	Wheel Bolt Torque: "300 in-lb" was "180 in-lb"	BB
C	02-10-97	6	Bolt Torque Values: (Now): " Wheel Bolts- 300 in lbs (Lubtork) Brake Bolts- P/N 103-22800, 200 in-lbs (Dry) P/N 103-40200 450 in-lbs (Dry) Was: "Wheel Bolts- 300 in-lbs Brake Bolts- 300 in-lbs	BB (0324-31)

MAIN WHEEL ASSEMBLY

I. Cleaning and Inspection of Main Wheel Assembly

1. Degrease all parts and dry thoroughly. A soft bristle brush may be used to remove hardened grease, dust or dirt.

WARNING!

DRY-CLEANING SOLUTIONS ARE TOXIC AND VOLATILE.

USE IN A WELL VENTILATED AREA.

AVOID CONTACT WITH SKIN OR CLOTHING.

DO NOT INHALE VAPORS.

2. Visually inspect bearing cones for nicks, scratches, water staining, spalling, heat discoloration, roller wear, cage damage, cracks or distortion. Replace if defective or worn.
3. Inspect wheel bearing grease for contamination and solidification at each periodic maintenance inspection. Do not exceed 500 wheel miles between repacking intervals.
4. Inspect wheel halves for cracks, corrosion, and other damage. Cracked or badly corroded castings should be replaced. Small nicks, scratches, or pits can be blended out using fine (400 grit) sandpaper. Refer to Appendix A for Sand-out limits.
5. Inspect snap rings and grease seals for distortion or wear. Replace if damaged or deformed.
6. Inspect bearing cups for looseness, scratches, pitting, corrosion, or evidence of overheating. If evidence of any defect exists, replace cup as explained in "Replacement of Bearing Cup Procedures." Coat cups with clean bearing grease.

7. Inspect wheel bolts for cracks, corrosion or other damage. Replace cracked bolts.
8. Inspect self-locking nuts for self-locking feature. Replace if self-locking feature is damaged or destroyed.

II. Replacement of Bearing Cup

1. Heat wheel half in boiling water for one hour, or in an oven not exceeding 250°F for 30 minutes.
2. Remove wheel half from source of heat. Bearing cup should be loose enough to fall out of bearing bore when inverted. If cup does not drop out, tap evenly from bore with a fiber drift pin.
3. After cup has been removed, repeat Step #1. Chill bearing cup in dry ice.
4. Remove wheel half from source of heat and bearing cup from dry ice.
5. Dry chilled bearing cup and coat contacting surfaces with zinc chromate primer.
6. Install chilled bearing cup in heated wheel half. Tap gently and evenly into place, using a fiber drift pin or suitable arbor press.

III. Repainting of Main Wheel Repaired Surfaces

1. Thoroughly clean repaired surfaces and areas of the wheel from which paint has been removed.
2. Paint exposed areas with one coat of primer and one coat of white enamel.

CAUTION!

NEVER PAINT WORKING SURFACES OF BEARING CUPS.

BRAKE ASSEMBLY

I. Cleaning and Inspection of Brake Assembly

1. Clean all metal parts and O-rings with denatured alcohol (gasoline and dry-cleaning fluids will damage O-rings). If O-rings are damaged or worn excessively, they should be replaced.
2. Inspect brake cylinder for cracks, nicks, corrosion, damaged threads, etc. Inspect inlet and outlet hydraulic ports for foreign contaminates. Examine cylinder walls for scoring or excessive wear. Blend and polish light scratches in piston cavities with fine emery cloth (600 grit). Castings that are cracked or have damaged threads should be replaced.
3. Inspect anchor bolts for cracks, corrosion, permanent set, and excessive wear. Replace bolts that are bent, cracked or severely corroded.
4. Inspect pistons for cracks, nicks, burrs, or excessive wear. Remove burrs and blend out nicks, using fine emery cloth (600 grit), and clean thoroughly.
5. Inspect pressure plate assembly for cracks, damaged rivets and excessive warpage. Replace if cracked or severely deformed. Replace cracked or deformed rivets.
6. Inspect brake cylinder bolts for cracks, thread damage, and self-locking feature. Replace bolts that are cracked, bent or have damaged threads.
7. Inspect brake linings for radial cracks around rivets and surface deterioration. Linings should be replaced when worn to a thickness of .100 inch. Worn linings may be easily removed by drilling out rivets, using a 5/32 drill. Install new linings in place using 105-00200 rivets.

8. Inspect brake disc for cracks, excessive wear or scoring, rust and corrosion. Remove rust and blend out small nicks using fine (400 grit) sandpaper. Brake disc should be replaced when worn to a thickness of .440 inch.

9. Inspect torque plate for cracks, nicks, burrs, rust, excessive wear and brinelling in bolt holes. Replace if cracked or severely deformed.

II. Repainting of Brake Assembly

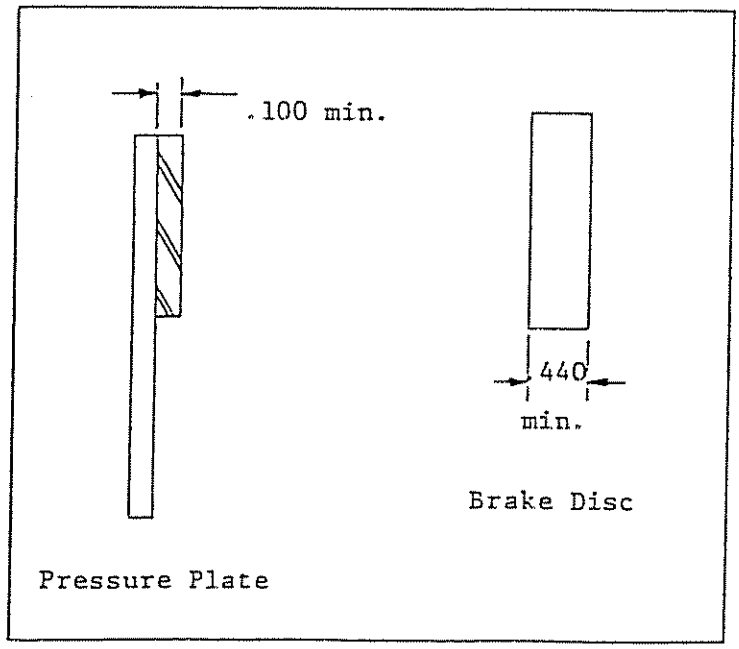
1. Thoroughly clean repaired surfaces and areas of the brake assembly from which paint has been removed.

2. Paint exposed areas with one coat of primer and one coat of white enamel.

CAUTION!

DO NOT PAINT PISTONS OR THE PISTON BORES IN THE BRAKE CYLINDER.

III. Recommended Wear Limits for Disc and Linings



MAIN WHEEL ASSEMBLY - TROUBLESHOOTING

TROUBLE	PROBABLE CAUSE	REMEDY
Cracked or disoriented wheel or wheel half	1. Hitting rocks or other hard objects during landing or takeoff	Replace wheel or wheel half. Cracked wheels cannot be repaired satisfactorily
	2. Landing with flat tire	
	3. Landing in crabbing position in crosswind causing excessive side force	
Damaged bearing cone	1. Misalignment of bearings	1. Check bearing cup Replace if damaged; Replace bearing cone being sure it is properly seated
	2. Axle nut improperly torqued	2. Torque axle nut t aircraft manufacturer specifications
	3. Foreign matter in bearing grease	3. Be sure bearing grease is free from foreign matter
	4. Lack of bearing grease	4. Repack bearing grease
Worn or damaged grease seal rings	1. Normal wear or improper installation	1. Replace grease seal rings

14. BRAKE ASSEMBLY - TROUBLESHOOTING

TROUBLE	PROBABLE CAUSE	REMEDY
Unable to obtain sufficient pressure	1. Air in hydraulic system	1. Bleed brake system
	2. Leak in system	2. Bleed brake system; Repair leak
Brakes drag	1. Piston cocked in cylinder	1. Remove and correct or replace piston
	2. Foreign matter wedged in brakes	2. Remove
:es do not hold	1. Lining worn out	1. Replace lining
	2. Lack of pressure due to air in system	2. Bleed brake system
	3. Oil or grease on lining	3. Wipe linings dry; (All saturated lining must be replaced.)
	4. New brake linings	4. Wear in or condition linings with a few light stops

BOLT TORQUE VALUES

Wheel Bolts - 300 in-lbs (Lubtork)
Brake Bolts - P/N 103-22800, 200 in-lbs (Dry)
P/N 103-40200, 450 in-lbs (Dry)

APPENDIX A

WHEEL SAND-OUT LIMITS

Repair scratches, nicks, corrosion, and other surface blemishes on wheel halves per instructions as follows:

A. Remove all corrosion and surface damage from wheel halves according to limits specified in the following paragraphs and defined in Figure 1A. Sand with emery cloth, then use fine, wet-or-dry, aluminum oxide cloth for polishing. Unless otherwise specified, surface finish of repaired surfaces should not exceed a roughness of 150 rms.

B. In area 1, polish out corrosion pits, scratches, and tool marks to .015 inch deep and .5 inch long. Surface finish in bead seat radius should be 20 microinches rms.

C. In area 2, blend out and polish imperfections to .030 inch deep and 1 inch long. Reworked area is not to exceed 1 square inch. Do not remove metal if surface directly opposite was previously reworked.

D. In area 3, blend out and polish imperfections to .030 inch deep and one square inch area.

E. In area 4, polish out imperfections to .010 inch maximum depth in register area, provided sealing qualities are maintained.

F. In area 5, blend out and polish imperfections to .030 inch deep and one square inch in area.

G. In area 6, rework is limited to .040 inch deep and .5 square inch in area at a maximum of two places.

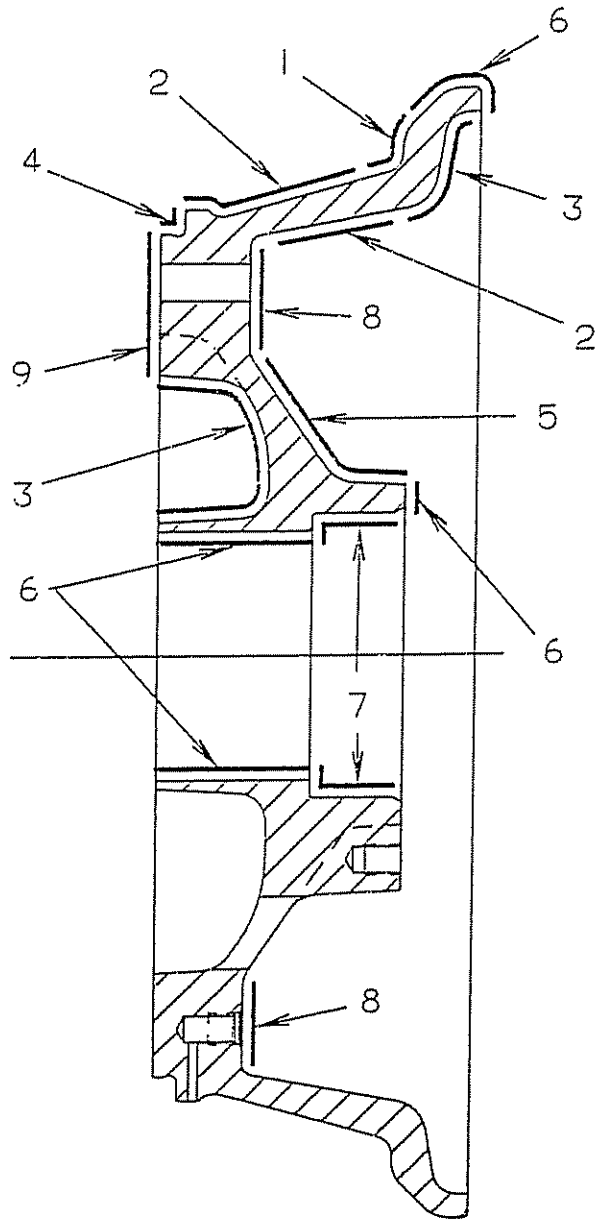
H. In area 7, rework is limited to blending out scratches and corrosion, provided bearing cup retention is not affected.

I. In area 8, rework is limited to .010 inch maximum depth on face of each bolt boss.

J. In area 9, the maximum repair is .010 inch deep and one-half square inch on each interface boss.

CAUTION:

REMOVAL OF CORROSION AND SURFACE DAMAGE WILL PREVENT STRESS CONCENTRATIONS AND PREMATURE WHEEL FAILURE. ANY REMOVAL OF MATERIAL WILL SHORTEN THE ROLL LIFE OF THE WHEEL; THEREFORE IT IS RECOMMENDED THAT MATERIAL REMOVED BY BLENDING BE LIMITED TO THE MINIMUM REQUIRED FOR REMOVING CORROSION OR SURFACE DAMAGE.



WHEEL REPAIR LIMITS

FIGURE 1A

Cleveland
Wheels & Brakes

Parker Hannifin Corporation
Aircraft Wheel & Brake
1160 Center Road, P.O. Box 158
Avon, Ohio 44011 USA
1-800-BRAKING (272-5464)
216-937-1272 • FAX 216-937-5409

PRODUCT REFERENCE MEMO

CONDITIONING PROCEDURE FOR NON ASBESTOS ORGANIC BRAKE LINING

The brake lining material used in this brake assembly is a non asbestos organic composition. This material must be properly conditioned in order to provide maximum performance and service life.

Conditioning may be accomplished as follows:

1. Taxi aircraft for 1500 feet with engine at 1700 rpm applying brake pedal force as needed to develop a 5 - 10 mph taxi speed.

2. Allow brakes to cool for 10 - 15 minutes.

3. Apply brakes and check to see if a high throttle static run up may be held with normal pedal force. If so, conditioning is completed.

4. If static run up cannot be held, repeat steps 1 through 3 as needed to successfully hold.

This conditioning procedure will generate sufficient heat to create a thin layer of glazed material at the lining friction surface. Normal brake usage should generate enough heat to maintain the glaze throughout the life of the lining.

Light brake usage can cause the glaze to wear off, resulting in reduced brake performance. In such cases, the lining may be conditioned again following the instructions set forth in this PRM.

Cleveland
Wheels & Brakes

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Aircraft Wheel & Brake
1160 Center Road
Avon, Ohio 44011 USA
1-800-BRAKING (272-5464)
216-937-1272 ● FAX 216-937-5409

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Wheels & Brakes

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Aircraft Wheel & Brake
1160 Center Road
Avon, Ohio 44011 USA
1-800-BRAKING (272-5464)
216-937-1272 ● FAX 216-937-5409

PRODUCT REFERENCE MEMO

AVAILABILITY OF GENERAL MAINTENANCE INFORMATION AND TORQUING PROCEDURES

EFFECTIVITY: All Parker Hannifin (Cleveland Wheels & Brakes) External Disc Design wheel & brake assemblies.

APPLICABILITY: Aircraft converted per STC approved kits to use Cleveland External Disc Design wheel & brake assemblies.

REASON: This PRM is issued to inform Wheel & Brake Conversion Kit users and installers that information regarding general maintenance and proper bolt / nut torquing procedures is available. This information is contained in the Cleveland Wheels & Brakes Component Maintenance Manual (CMM) and in the Cleveland Technicians Service Guide, PRM64. Most Cleveland Conversion Kits were designed prior to creation of the CMM. Parker Hannifin is in process of upgrading kit paperwork to include a requirement to use the CMM and PRM64 as wheel & brake service information. This PRM serves the same purpose for kits whose paperwork has not yet been upgraded.

DESCRIPTION: The Cleveland Wheels & Brakes Component Maintenance Manual and PRM64, Technician's Service Guide shall be used as service information when performing general maintenance on Cleveland External Disc Design wheels & brakes. Particular attention should be paid to instructions regarding wheel bolt torquing procedures.

NOTE: Refer to the CMM or PRM64 to determine the required torque procedure (Dry or Lubtork). While using the required torque procedure, observe the torque required to turn the nut (free running torque). This value must be added to the value stated on the casting or nameplate (or in the CMM or PRM64) to obtain a true torque value. Proper torque is imperative to prevent premature bolt or mating component failure.

COMPLIANCE: Highly Recommended.

APPROVAL: The engineering contents of this Product Reference Memo are FAA DER approved.

WEIGHT & BALANCE: Not applicable.

PUBLICATIONS: Cleveland Wheels & Brakes Component Maintenance Manual and PRM64 are available from:

Customer Support
Parker Hannifin Corporation
Aircraft Wheel & Brake
1160 Center Road
Avon, Ohio

Phone: 1-800- BRAKING (272-5464)
FAX: 216-937-5409

Parker Hannifin Corporation
Aerospace/Aircraft Wheel & Brake
1160 Center Road
Avon, OH 44011

Date: _ _/_ _/20_ _

Subject: Letter of Authorization for Installation of STC'd Conversion Kits

To whom it may concern:

Parker Hannifin Corporation, Aircraft Wheel & Brake Division, hereby states that the following item(s):

KIT NUMBER: 199-_____

FAA APPROVAL: 1) STC # _____

NO OTHER APPROVALS NECESSARY

AUTHORIZATION TO INSTALL: With the sale of this STC KIT, OWNER of the Supplemental Type Certificate agrees to permit the buyer or buyer's agent or agency to use the certificate to alter the product under the terms and conditions of this STC.

A/C MAKE: _____

A/C MODEL_____

TAIL # _____

Regards,

Technical Support Team
Technical Hotline (800) 272-5464
Clevelandwbhelp@parker.com
Web-site: www.clevelandwheelandbrake.com
Manufacturer of Cleveland Wheels & Brakes

United States of America

Department of Transportation—Federal Aviation Administration

Supplemental Type Certificate

Number SA651GL

This certificate, issued to Aircraft Wheel & Brake Division
Parker Hannifin Corporation
1160 Center Road
Avon, Ohio 44011

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part 4a *of the* Civil Air *Regulations.* (For complete certification basis, see Type Certificate Data Sheet Number A-783.)

Original Product—Type Certificate Number A-783
Make Gulfstream American
Model G-73

Description of Type Design Change

Install Cleveland (Parker Hannifin) Wheel and Brake Conversion Kit, Part Number 199-113, Revision A dated October 29, 1982, according to Parker Wheel & Brake Installation Drawing Number 50-83, Revision B dated October 15, 1982.

Limitations and Conditions

Also applies to Grumman American Model G-73 Mallard airplanes which have been mofified with turbine engines according to STC SA2323WE.

The installer must determine the compatibility of this modification with other previously approved modifications.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application April 15, 1982 *Date reissued*

Date of issuance October 28, 1982 *Date amended*

By direction of the Administrator

W. F. Horn *(Signature)*
Manager, Chicago Aircraft Certification Office, ACE-115C
Central Region *(Title)*

Any alteration of this certificate is punishable by a fine of not exceeding $1,000, or imprisonment not exceeding 3 years, or both.

This certificate may be transferred in accordance with FAR 21 47

FAA Form 8110-2 (10-68)